

MAR 18 2009

Application No. 10/539,344

Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1-33. (Canceled)

34. (Currently Amended) A transmission system for a measurement device for a coordinate positioning ~~apparatus~~ apparatus, comprising:

a first station for mounting with ~~one of the measuring device and the coordinate positioning apparatus;~~ the measurement device; and

a second station for mounting with the ~~other of the measuring device and the coordinate positioning apparatus;~~

wherein the first and second stations communicate using a spread spectrum radio link; the spread spectrum radio link being a frequency hopping radio link in which the first and second stations frequency hop between a series of different frequency channels.

wherein, in the event of a measurement event, the first station transmits information relating to the measurement event.

wherein the information relating to the measurement event transmitted by the first station includes data relating to a time of the measurement event.

35. (Canceled)

36. (Previously Presented) A transmission system according to claim 34 wherein the measurement device is a measurement probe.

37. (Previously Presented) A transmission system according to claim 36 wherein the measurement probe is a touch trigger probe.

38. (Previously Presented) A transmission system according to claim 36 wherein the measurement probe is a scanning probe.

Application No. 10/539,344

39. (Currently Amended) A transmission system according to ~~claim~~ claim 34 wherein the transmission system uses a worldwide ~~license~~ license free radio frequency band.

40. (Previously Presented) A transmission system according to claim 34 wherein the first and second stations are provided with a clock and wherein the clocks are synchronised at least once.

41. (Previously Presented) A transmission system according to claim 40 wherein the first station transmits a regular transmission and wherein when the second station receives the signal it will synchronise its clock with the first station.

42. (Currently Amended) A transmission system according to claim 41 ~~wherein the first and second stations frequency hop between different frequency channels and~~ wherein when the first and second stations are synchronised, their frequency hopping is synchronised.

43. (Canceled)

44. (Currently Amended) A transmission system according to ~~claim 43~~ claim 37 wherein said measurement event is a touch trigger event.

45. (Currently Amended) A transmission system according to ~~claim 43~~ claim 38 wherein said measurement event ~~is position~~ is a position measurement.

46. (Canceled)

47. (Currently Amended) A transmission system according to ~~claim 42~~ claim 34 wherein the first station transmits a regular transmission and ~~wherein~~ wherein the information relating to the measurement event is transmitted in an additional transmission.

48. (Currently Amended) A transmission system according to ~~claim 43~~ wherein claim 34 wherein, in the event of the first station receiving a transmission from the second station, a measurement event is performed by the measurement device and the first station transmits ~~data~~ information relating to said measurement event.

Application No. 10/539,344

49. (Currently Amended) A transmission system according to ~~claim 34~~
~~wherein claim 34, wherein~~
_____the measurement device comprises a touch trigger ~~probe; probe and the~~
measurement event comprises a touch trigger event;
_____the first and second stations ~~hop between a series of different frequency~~
~~channels;~~
_____wherein the first station transmits a regular signal and wherein if the second
station receives the regular signal it will synchronise with the first station;
_____and ~~wherein wherein,~~ in the event of a touch trigger event, the first station ~~may~~
~~transmit~~ transmits information relating to the touch trigger event in the form of an additional
signal which includes data relating to ~~the time a time~~ of the touch trigger event ~~event;~~ and
_____wherein the second station is provided with means for receiving said data
representing the time and providing a probe output signal derived therefrom.
50. (Previously Presented) A transmission system according to claim 34 wherein
if a signal transmitted by the first station is not adequately received by the second station, the
signal is retransmitted by the first station.
51. (Previously Presented) A transmission system according to claim 50 wherein
if the second station receives the signal transmitted by the first station, it transmits an
acknowledgement signal and if the first station does not receive an acknowledgement signal
in response to its signal, it will re-transmit said signal.
52. (Previously Presented) A transmission system according to claim 34 wherein
the transmission system comprises a half duplex link.
53. (Currently Amended) A transmission system according to claim 34 ~~wherein~~
wherein, when a signal transmitted by the first station that contains information relating to the
measurement device, ~~the measurement device output signal in event is received by the second~~

station, the second station is produced-produces a measurement device output signal after a time delay.

54. (Currently Amended) A transmission system according to claim 53 wherein the time delay is chosen so that it is long enough to allow ~~retransmissions-~~retransmission of the signal within the time delay.

55. (Previously Presented) A transmission system according to claim 34 wherein a master clock is provided at one end of the transmission system and a sliding correlator is provided to recover the master clock.

56. (Currently Amended) A transmission system according to ~~claim 52-~~claim 53 wherein a master clock is provided at one end of the transmission system and wherein the master clock provides a reference for the measurement device output signal time delay.

57. (Previously Presented) A transmission system according to claim 55 wherein if the second station receives a signal from the first station it transmits an acknowledgement signal and wherein the acknowledgement signal is synchronised with the master clock.

58. (Previously Presented) A transmission system according to claim 34 wherein a signal sent between the first and second stations comprises data bits and wherein data bits relating to more important information are provided with greater error protection than other data bits.

59. (Previously Presented) A transmission system according to claim 58 wherein the data bits relating to more important information may be provided with a higher hamming distance than other data bits.

60. (Previously Presented) A transmission system according to claim 34 wherein the first station transmits regular signals and wherein the first station has a mode and wherein each regular signal asks if the first station should change mode, and wherein if the first station receives an affirmative response, it changes mode.

61. (Previously Presented) A transmission system according to claim 34 wherein if the first and second stations are not synchronised, the first and second stations will hop between frequency channels at different rates until the second station receives a signal and synchronises with the first station.

62. (Previously Presented) A transmission system according to claim 34 wherein if the second station detects background noise above a predetermined level on the selected frequency channel, it will change to a different frequency channel.

63. (Previously Presented) A transmission system according to claim 34 wherein the first station has an ID code and wherein the second station can be set to only communicate with the said first station having said ID code.

64. (Previously Presented) A transmission system according to claim 34 wherein the first station is provided with a mode in which it transmits a signal containing its ID code and the second station is provided with a mode in which on receiving said signal, it is set to only communicate with the first station having this ID code.

65-66. (Canceled)

67. (New) A transmission system for a measurement device for a coordinate positioning apparatus, comprising:

a first station for mounting with the measurement device; and

a second station for mounting with the coordinate positioning apparatus,

wherein the first and second stations communicate using a spread spectrum radio link,

wherein a master clock is provided at one end of the transmission system and a correlator is provided at the other end of the transmission system to recover the master clock.

68. (New) A transmission system according to claim 67, wherein the first station comprises the master clock and the second station comprises the correlator.

69. (New) A transmission system for a measurement device for a coordinate positioning apparatus, comprising:
- a first station for mounting with the measurement device; and
 - a second station for mounting with the coordinate positioning apparatus;
- wherein the first and second stations communicate using a spread spectrum radio link,
- wherein, in the event of a measurement event, the first station transmits a signal comprising information relating to the measurement event,
- wherein, when a signal transmitted by the first station containing information relating to the measurement event is received by the second station, the second station produces a measurement device output signal,
- wherein there is a time delay between the measurement event and the production of the measurement device output signal,
- wherein, if a signal transmitted by the first station is not adequately received by the second station, the signal is retransmitted by the first station, and
- wherein the time delay is sufficiently long to allow the first station to retransmit the signal within the time delay.
70. (New) A transmission system according to claim 69, wherein the measurement device comprises a touch trigger probe, the measurement event comprises a trigger event and the measurement device output signal produced by the second station comprises a machine station probe output, and wherein the delay between each trigger event and the resulting machine station probe output is substantially constant.
71. (New) A transmission system according to claim 69, wherein the first station comprises a timer for measuring a time between the measurement event and the transmission

Application No. 10/539,344

of the signal comprising information relating to the measurement event, wherein the
information relating to the measurement event comprises the time measured by the timer.